

Program: Biology

Division: STEM

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With the approval of the Academic Senate and the Institutional Planning and Effectiveness Committee, we are moving to a bi-annual cycle of program review updates and full program reviews. **Fall 2023 is a Program Update cycle.**

Please note: Program Update is NOT in itself a vehicle for making requests. All requests should be made through appropriate processes (e.g., Instructional Equipment Requests) or directed to your dean or supervisor.

Time Frame: This Program Update *should reflect* on program status during the 2022-23 academic year. It should *describe plans* starting now and continuing through 2023-24.

Key Terms: The Program Review Glossary defines key terms that you can review before writing: <https://bit.ly/2LqPxOW>

HELPFUL LINKS:

- 1) [Program Review Committee Page for Writers](#)
- 2) [Fall 2022 Program Reviews](#)
- 3) [Frequently Asked Questions](#)

For Help: Contact Nadiyah Taylor: ntaylor@laspositascollege.edu.

INSTRUCTIONS:

- 1) Please respond to each question with enough detail to present your information, but it doesn't have to be very long.
- 2) If the requested information does not apply to your program, write "Not Applicable."
- 3) Suggested: Communicate with your dean while completing this document.
- 4) Send an electronic copy of this form to Nadiyah Taylor and your dean **by November 1, 2023**

IMPORTANT CHANGES AND REMINDERS

Some sections have been removed for ease of completion. However, these important tasks will need to be reviewed by programs:

- ✓ **Check for Title V updates required for any of your courses or Programs:**
 1. To check on the status of courses and programs to see if any updates are required
 - a. Log in to CurricUNET
 - b. Select "Course Outline Report" under "Reports/Interfaces"
 - c. Select the report as an Excel file or as HTML)
 2. If updates are needed, submit these updates to the Curriculum Committee
 3. Then, compare each Program Map to your current course offerings and course sequencing. Pay close attention to prerequisite information and to classes that may only be offered during certain semesters.
 - a. If your map requires a **non-Curricular** change (i.e., course sequencing) consult your [Pathway counseling faculty liaison](#) to initiate any changes.
 - b. If your map requires a **Curricular Change** (Program modifications) - these are initiated through the Curriculum Committee.
- ✓ **Review your programs to see if there are any modifications needed**
- ✓ **Review your programs and courses to see if any will be sunset or deactivate**

HAS YOUR PROGRAM HAD ANY SIGNIFICANT UPDATES SINCE THE LAST PROGRAM REVIEW?

- No, I'd like to skip the update this year, and I understand that I can only do this twice in three years.**

THERE ARE TWO SECTIONS:

1. Updates - *All programs* (page 3)
2. CTE Review – *CTE programs only* (pages 4-7)

ALL PROGRAMS: SECTION ONE

1. Please describe the most important updates, achievements, challenges, or barriers to your program in academic year 22-23.
 - In the spring of 2023, the Biology Department had a successful search for a new full-time Anatomy instructor with the hiring of Angel Cardenas-Contreras.
 - Unfortunately, at the end of the academic year we also lost a full-time Botany instructor, Michal Shuldman who left for another institute.
 - An ongoing challenge for the department is to maintain a strong pool of adjunct faculty; we compete with other community colleges for highly skilled instructors, and veteran part-time faculty leave for full-time positions elsewhere. A particular challenge in 22-23 was finding faculty with expertise in zoology, cell & molecular biology, and botany.
 - Onboarding new part-time faculty is a challenge, particularly when the HR processing time of new hire paperwork results in instructors without access to rosters or Canvas by the start of the semester.
 - We have seen decreased student success and/or retention rates for some DI populations, compared to average departmental rates.
 - We updated the Allied Health AA by removing Chem 30B from the required core. This change was made because most nursing programs do not require Chem 30B. The updated Allied Health degree will go into effect Fall 2024.
 - The Badging program is ongoing, with multiple badging opportunities embedded in the BIO1C course.
 - We continued the development and inclusion of Biotechnology curriculum in both majors and non-majors biology courses. Improvements were made from previous year's biotech curriculum based on student and faculty surveys.

LPC Equity Definition: Equity is parity in student educational outcomes. It places student success and belonging for students of color and disproportionately impacted students at the center of focus.

2. What are the most important things your program observed with respect to student learning, equity, and success in 22-23? This could be related to your SLOs or from other sources.

Through an NSF ATE grant, we have incorporated hands-on and analytical Biotechnology curriculum into our majors Biology sequence. Each course has added a new module that includes 1-4 laboratory class sessions. They are as follows:

- Botany: Culture/Manufacture Algae in Photobioreactors
- Zoology: Antigen Testing, Quantitative ELISA
- Cellular/Molecular: PCR, Sequence Analysis

Tied to the same grant, a survey of Majors Biology courses conducted in May 2023 included 58 student responses, about 32% of students enrolled in Biology 1A, 1B, and 1C combined. This survey was conducted by an evaluator at Lawrence Hall of Science in association with this grant. When asked to describe their experiences, students were overwhelmingly positive (Figure 1). Additionally, some students felt that instruction could have been clearer for the activities; we can use this data to make improvements in future semesters.



Figure 1. These words/phrases were used by the percentage of students shown.

- In order to support career readiness, we are developing an assignment for students to set up their LinkedIn profile. We assess student Biotech proficiency incrementally as they acquire new skills, and they can earn Digital BioBadges that can be incorporated into their LinkedIn Profiles. Approximately 60% of students have earned BioBadges.

- 26% percent of students reported being White, 53% Asian (multiple regions), 17% LatinX, and 4% other races or ethnicities. LatinX students are the fastest-growing demographic in our majors Biology program. Among all students, 84% primarily speak English outside of school. In comparison, 70% of LatinX students speak Spanish outside of school. At LPC, recent information shows that percent retention and completion by LatinX students is lower than the general student population. We asked Biology students about the change in their confidence and familiarity with Biotechnology skills after they participated in the new curriculum. LatinX students tended to report lower confidence before the newly incorporated Biotechnology curriculum, and then have larger gains in confidence compared with students overall (Figure 2).

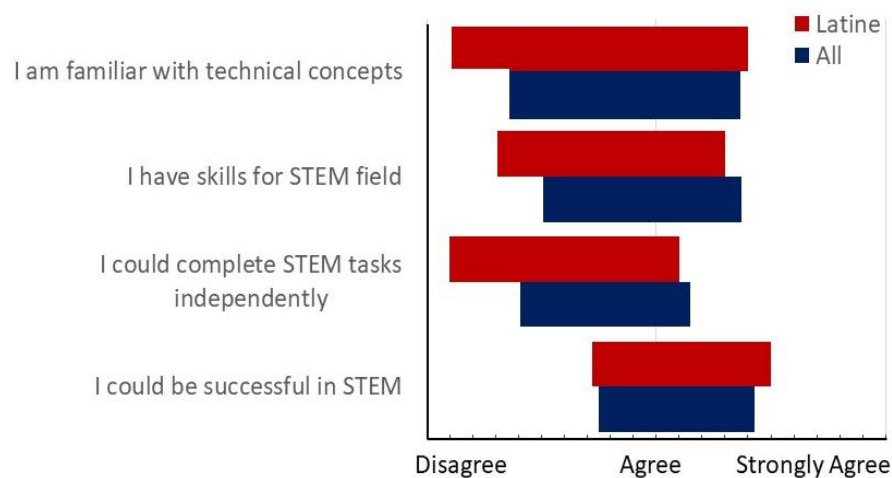


Figure 2. Self-reported change after Biotechnology Curriculum Experience

Biology Department Demographics and Course Success Rates

- The distribution of race and ethnicity of Biology students is similar to that of the campus-wide student body.
- The course success rate for the Biology Department in AC 22-23 was 74.3%, an increase from 71.3% in AC 21-22 and 72.1% in AC 20-21. The success rate was also above the set standard of 67.6%. Disproportionate impacts were found for African American students (63% course success rate) and LatinX students (68% course success rate)

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3. Got anything new planned for 23-24?

- We submitted a Faculty Position Request to replace the recently vacated full-time Botany position and hope to form a hiring committee in spring 2023.
- We plan to continue to onboard our new full-time faculty member, Angel Contreras Cardenas.
- We plan to continue to streamline and improve the onboarding process for new part-time faculty.
- We plan to continue recruiting for our part-time faculty pool.
- We will continue integrating and improving our newer biotechnology and bioinformatics curriculum into various biology courses.
- We hope to run the new Bioinformatics course this year.
- We will conduct student surveys and focus groups to learn about issues that they face, with an emphasis on diversity and equity - to learn how to better support students who are members of historically underserved groups.
 - This year we are lucky to have funding from the National Science Foundation to work with a professional evaluator to help us develop some survey instruments, hold focus groups, and analyze the data from the focus groups.
- The Biology Department will continue to be involved in the ongoing STEAM building planning.
- To address potential financial barriers to our Allied Health majors, two faculty members will be completing ASCCC OERI: OER Basics course to explore zero-cost and low-cost textbooks and manuals to reduce the cost required for materials for anatomy and the other allied health courses. The high cost of the Allied Health courses could be a barrier for entry and/or completion of the major.
- We will keep abreast of the developments regarding the vote to move to an alternative calendar.
- As we receive approvals for new and/or replacement hires, we plan on exploring and implementing methods so that there is a diversity of candidates.
- We submitted an Instructional Equipment Request for additional three-dimensional models to support Allied Health courses, aiming for a model/student ratio of 6:24.
- We submitted our 3-year SLO plan and will collect CSLO data from major courses to examine the research PSLO

CTE UPDATE (CTE PROGRAMS ONLY): SECTION TWO

Vicki Shipman will provide you with or support any data needs

LABOR MARKET CONDITIONS: EXAMINE YOUR MOST RECENT LABOR MARKET DATA (WITHIN THE LAST 2 YEARS).

1. Demonstrate labor market need (demand – completers = need); projected growth for the next five years.

2. What is the median income for occupations within your program?

ADVISORY BOARDS:

1. Has your program complied with advisory board recommendations?
 - i. _____YES _____No

2. If not, please explain.

STRONG WORKFORCE PROGRAM METRICS: UTILIZING LAUNCHBOARD, REVIEW THE STRONG WORKFORCE PROGRAM METRICS. REVIEW THE DATA AND THEN REPORT ON YOUR SPECIFIC PROGRAM.**Data Reporting Notes:**

Data are suppressed according to FERPA to protect students' personally identifiable information. Suppression takes place when too few students are included in the metric. Meaning, if there is not data, your program did not have a minimum of ten (10) students for this metric.

LaunchBoard data metrics lag in terms of academic year reporting. For your program review

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SWP metrics, report on the latest year available with a notation of the year. Meaning, if there is not data, your program did not have a minimum of ten (10) students for this metric.

CI. STRONG WORKFORCE PROGRAM STUDENTS

Report on students in your program who took at least 0.5 units in any single credit course or who had at least 12 positive attendance hours in any noncredit course(s) in the selected year or who enrolled in noncredit course(s) in Spring 2020 or any term in academic year 2021 and who enrolled on a TOP code that is assigned to a vocational industry sector in the selected year.

How may these metrics improve?

C2. SWP STUDENTS WHO EARNED 9 OR MORE CAREER EDUCATION UNITS IN THE DISTRICT IN A SINGLE YEAR

Report on students in your program, the proportion who successfully completed nine or more career education semester units in the selected year within a single district

How may these metrics improve?

C3. SWP STUDENTS WHO COMPLETED A NONCREDIT CTE OR WORKFORCE PREPARATION COURSE

Report on students in your program with a noncredit enrollment on a CTE TOP code or a noncredit enrollment in a workforce preparation course, the proportion who completed a noncredit CTE or workforce preparation course or had 48 or more contact hours in a noncredit CTE or workforce preparation course(s) in the selected year

How may these metrics improve?

C4. SWP STUDENTS WHO EARNED A DEGREE OR CERTIFICATE OR ATTAINED APPRENTICESHIP JOURNEY STATUS

Report on students in your program the number of unduplicated SWP students in your program who earned a noncredit certificate, Chancellor's Office approved certificate, associate degree, and/or CCC baccalaureate degree on a TOP code assigned to a vocational sector and who were enrolled in the district on any TOP code in the selected year or who attained apprenticeship journey status on a vocationally flagged TOP code in the selected year and who were enrolled at any community college at the start of the apprenticeship program on a vocationally flagged TOP code

How may these metrics improve?

C5. SWP STUDENTS WHO TRANSFERRED TO A FOUR-YEAR POSTSECONDARY INSTITUTION

Report on students in your program who earned 12 or more units at any time and at any college at any time up to and including the selected year and who exited the community college system, the number of students who enrolled in any four-year postsecondary institution in the subsequent year

How may these metrics improve?

C6. SWP STUDENTS WITH A JOB CLOSELY RELATED TO THEIR FIELD OF STUDY

Report on students in your program who responded to the CTE Outcomes Survey and did not transfer to any postsecondary institution, the proportion who reported that they are working in a job very closely or closely related to their field of study.

How may these metrics improve?

C7. MEDIAN ANNUAL EARNINGS FOR SWP EXITING STUDENTS

Report on students in your program who exited the community college system and who did not transfer to any postsecondary institution, median earnings following the academic year of exit

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How may these metrics improve?

C8. MEDIAN CHANGE IN EARNINGS FOR SWP EXITING STUDENTS

Report on students in your program students who exited and who did not transfer to any postsecondary institution, median change in earnings between the second quarter prior to the beginning of the academic year of entry (for the first time ever as a non-Special Admit or return to any community college after an absence of one or more academic years) and the second quarter after the end of the academic year of exit from the last college attended.

How may these metrics improve?

C9. SWP EXITING STUDENTS WHO ATTAINED THE LIVING WAGE

Report on students in your program who exited college and did not transfer to any postsecondary institution, the proportion who attained the district county living wage for a single adult measured immediately following academic year of exit.

How may these metrics improve?